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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,867

09/22/2005

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02/05/2009

EXAMINER

ARNADE, ELIZABETH AMALIA

ART UNIT

PAPER NUMBER

4122

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,867	Applicant(s) MASUDA ET AL.	
	Examiner ELIZABETH ARNADE	Art Unit 4122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/22/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-11 are pending as amended on 9/22/05.

Claim Objections

2. Claim 3 objected to because of the following informalities: The examiner believes a grammatical error has occurred wherein the article "a" should be replaced by the article "the" as similarly written in claim 4. With the incorrect article in place, the claim is rendered indefinite. As read currently, claim 3 does not clearly state what applicant means by 'characterized in that **a content** of the luminescent substance is 0.1 to 5%'. It is unclear to exactly what content of the luminescent substance should comprise 0.1 to 5%. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 9 rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 3,527,711 (Barber et al.).

Barber et al. teaches that a method of manufacturing a luminescent glass article, characterized by comprising: mixing a plurality of glass particles and a luminescent

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substance; pouring the mixture into a refractory vessel; and subjecting the mixture to heat treatment for sintering (Col. 1, lines 43-54). Barber teaches that the heating must be done at a range of 1000 – 1750 °C and therefore it is inherent within the disclosure that the mixture must be placed into and heated in a refractory vessel of some kind which can withstand very high temperatures for a desired length of time (Col. 5, lines 35-44).

1. Claim 1-4 and 11 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Japanese Patent Application Publication 10-101371 (Ezoe et al.).

In regards to claims 1-4 and 11, Ezoe et al. teaches a luminescent glass article, characterized by comprising a luminescent substance dispersed uniformly in glass (Abstract); wherein the content of the luminescent substance is 0.1 to 5 mass% (Abstract); in that the glass is composed of one type or two or more types of glass selected from the group consisting of soda-lime glass, borosilicate glass, aluminosilicate glass, and aluminoborosilicate glass (Abstract).

Ezoe et al. specifically discloses that the glass is comprised of borosilicate glass wherein the luminescent substance is a light accumulating phosphor (Abstract).

In regards to the remainder of claim 1, stating that the luminescent glass article's light transmittance is 20 to 90% at a thickness of 10 mm with initial luminescence intensity just after irradiation of light of 1,000 lux for 20 min of 200 to 4,000 mcd/m² would have been properties of the glass article disclosed by Ezoe et al.

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Similarly in regards to claim 2, stating that the luminescent glass article is characterized in that the luminescence intensity 10 min after the irradiation is 10% or more of the initial luminescence states a property of the glass article.

Since the article comprises a luminescent substance in a glass it would be inherent that the article would have a light transmittance at a particular thickness and luminescence intensity claimed.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5-7 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Ezoe et al. as applied to claim 4 in view of US patent Application Publication US 2005/0160637 (Hesse).

In regards to claims 5 and 10, it would be obvious to one of ordinary skill in the art at the time the invention was made that the glass article disclosed in the prior art would have a softening point as this is a physical property inherent of glass. The prior art expressly discloses that the glass is of a borosilicate-based glass. Borosilicate-based glass was widely known at the time of the invention in that it may be made with a

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composition resulting in a softening point that would fall within the range of 650 - 1,100°C.

Ezoe et al. teaches a luminescent glass article containing a luminescent substance of a light accumulating phosphor as detailed above. Ezoe et al. does not expressly disclose that the luminescent substance has a particle size of 50 to 5,000 micrometers.

Hesse discloses a closely related invention of a luminescent material which may comprise glass and a light accumulating phosphor as a luminescent substance wherein the particle size of the luminescent substance may vary (pg. 1, paragraph 5). Hesse expressly discloses that a range of 10-70 micrometer is preferably employed (pg. 1, paragraph 5).

It would be obvious to one of ordinary skill in the art at the time the invention was made to include the teachings related to the particle size for the luminescent substance taught by Hesse with the luminescent glass article of Ezoe et al. The rationale to combine the teachings of Ezoe et al. and Hesse is the motivation provided by the teaching of Hesse that the particle size may vary based on the desired effect of glow time and intensity (pg. 1, paragraph 5).

4. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Ezoe et al. as applied to claim 4 in view of US Patent 4,405,881 (Kobayashi hereinafter).

Ezoe et al. teaches a luminescent glass article containing a luminescent substance of a light accumulating phosphor as detailed above. Ezoe et al. does not

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expressly disclose that the luminescent glass article is formed into a block or plate having a thickness of 5-10 mm.

Kobayashi discloses a closely related invention of a luminescent glass article wherein the glass article is a plate with a thickness of 2-10mm (Claim 1; Col. 3, lines 31-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was to include the plate thickness of Kobayashi with the glass article of Ezoe et al. The rationale to combine the teachings of Ezoe et al. and Kobayashi is the motivation provided by the teaching of Kobayashi that there is an inverse relationship between the amount of glass and luminescent substance needed to balance glass melting properties, costs, and the effect of the luminescent substance (Col.3, lines 38-46).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent 6,204,211 (Ohara et al.) teaches a luminous glass ceramic comprising a luminescent substance wherein the substance is uniformly added to the glass ceramic in an amount of 0.1-30 wt% wherein the resulting article has a light transmittance of 60-90% at a thickness of 10 mm. US Patent 5,204,289 (Moh) teaches glass-based and glass-ceramic-based composites including borosilicate-based glass and aluminosilicate-based glass with softening points ranging from 625-650°C and 630-700°C respectively..

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH ARNADE whose telephone number is (571)270-7664. The examiner can normally be reached on M-F, 9:00-5:00 p.m. EST except alternate F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. A./
Examiner, Art Unit 4122

/Milton I. Cano/
Supervisory Patent Examiner, Art Unit 4122